

FILE 'HOME' ENTERED AT 14:49:40 ON 09 JUN 2000

=> index patent

FILE 'PAPERCHEM' ACCESS NOT AUTHORIZED  
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
0.21	0.21

FULL ESTIMATED COST

INDEX 'CAOLD, CAPLUS, APIPAT, APIPAT2, CROPU, DGENE, DPCI, EUROPATFULL, IFIPAT,  
INPADOC, JAPIO, PAPERCHEM2, PATDD, PATDPA, PATOSDE, PATOSEP, PATOSWO,  
PIRA, RAPRA, TULSA, TULSA2, USPATFULL, WPIDS, WPINDEX'  
ENTERED AT 14:49:44 ON 09 JUN 2000

24 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view  
search error messages that display as 0\* with SET DETAIL OFF.

=> s bacillus?

3858	FILE CAOLD
51745	FILE CAPLUS
143	FILE APIPAT
143	FILE APIPAT2
6618	FILE CROPU
11305	FILE DGENE
1350	FILE DPCI
3071	FILE EUROPATFULL
2597	FILE IFIPAT
2728	FILE INPADOC
3119	FILE JAPIO
249	FILE PAPERCHEM2
61	FILE PATDD
582	FILE PATDPA
241	FILE PATOSDE
713	FILE PATOSEP
454	FILE PATOSWO
67	FILE PIRA
29	FILE RAPRA
72	FILE TULSA
15	FILE TULSA2
14725	FILE USPATFULL
8421	FILE WPIDS
8421	FILE WPINDEX

24 FILES HAVE ONE OR MORE ANSWERS, 24 FILES SEARCHED IN STNINDEX

L1 QUE BACILLUS?

=> file hit

COST IN U.S. DOLLARS  
FULL ESTIMATED COST

SINCE FILE ENTRY	TOTAL SESSION
1.02	1.23

FILE 'CAPLUS' ENTERED AT 14:50:47 ON 09 JUN 2000  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2000 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPATFULL' ENTERED AT 14:50:47 ON 09 JUN 2000  
CA INDEXING COPYRIGHT (C) 2000 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'DGENE' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 DERWENT INFORMATION LTD

FILE 'WPIDS' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 DERWENT INFORMATION LTD

FILE 'WPIINDEX' ACCESS NOT AUTHORIZED

FILE 'CROPUS' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 DERWENT INFORMATION LTD

FILE 'CAOLD' ENTERED AT 14:50:47 ON 09 JUN 2000  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2000 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'JAPIO' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 Japanese Patent Office (JPO)

FILE 'EUROPATFULL' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (c) 2000 WILA Verlag Muenchen (WILA)

FILE 'INPADOC' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 European Patent Office, Vienna (EPO)

FILE 'IFIPAT' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 IFI CLAIMS(R) Patent Services (IFI)

FILE 'DPCI' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 DERWENT INFORMATION LTD

FILE 'PATOSEP' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (c) 2000 WILA Verlag Muenchen (WILA)

FILE 'PATDPA' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (c) 2000 Deutsches Patent- und Markenamt / FIZ Karlsruhe (DPMA/FIZ KA)

FILE 'PATOSWO' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (c) 2000 WILA Verlag Muenchen (WILA)

FILE 'PAPERCHEM2' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 Institute of Paper Science and Technology (IPST)

FILE 'PATOSDE' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (c) 2000 WILA Verlag Muenchen (WILA)

FILE 'APIPAT' ENTERED AT 14:50:47 ON 09 JUN 2000  
Abstracts copyright (C) Derwent Information Ltd.  
Remainder of the file copyright (C) 2000 Elsevier Engineering  
Information, Inc. (DERWENT/ELSEVIER)

FILE 'APIPAT2' ENTERED AT 14:50:47 ON 09 JUN 2000  
Abstracts copyright (C) Derwent Information Ltd.  
Remainder of the file copyright (C) 2000 Elsevier Engineering  
Information, Inc. (DERWENT/ELSEVIER)

FILE 'TULSA' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 The University of Tulsa (UTULSA)

FILE 'PIRA' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 Pira International

FILE 'PATDD' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT 2000 (C) Deutsches Patent- und Markenamt (DPMA)

FILE 'RAPRA' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 RAPRA Technology Ltd.

FILE 'TULSA2' ENTERED AT 14:50:47 ON 09 JUN 2000  
COPYRIGHT (C) 2000 The University of Tulsa (UTULSA)

=> s 11

• L2 112306 L1

=> s 12 and alkalophil? and asporogen?

L3 8 L2 AND ALKALOPHIL? AND ASPOROGEN?

=> dup rem 13

DUPLICATE IS NOT AVAILABLE IN 'DGENE, CAOLD, DPCI'.

ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE

PROCESSING COMPLETED FOR L3

L4 7 DUP REM L3 (1 DUPLICATE REMOVED)

=> d ibib ab 1

L4 ANSWER 1 OF 7 USPATFULL

ACCESSION NUMBER: 96:12809 USPATFULL

TITLE:

Thermostable arabino furanoside produced by  
**Bacillus stearothermophilus** NRRL B-18659,  
**Bacillus stearothermophilus** NRRL B-18660 and  
**Bacillus stearothermophilus** NRRL B-18661

INVENTOR(S):

Zamost, Bruce L., Danbury, CT, United States  
Elm, Dana D., Waterbury, CT, United States

PATENT ASSIGNEE(S):

Novo Nordisk A/S, Bagsvaerd, Denmark (non-U.S.  
corporation)

NUMBER DATE

----- -----

PATENT INFORMATION: US 5491087 19960213  
APPLICATION INFO.: US 1995-418044 19950406 (8)  
RELATED APPLN. INFO.: Division of Ser. No. US 1993-87476, filed on 2 Jul  
1993, now abandoned which is a continuation of Ser. No.  
US 1992-961044, filed on 14 Oct 1992, now abandoned  
which is a continuation of Ser. No. US 1990-535099,  
filed on 8 Jun 1990, now abandoned

DOCUMENT TYPE: Utility

PRIMARY EXAMINER: Naff, David M.

ASSISTANT EXAMINER: Meller, Michael V.

LEGAL REPRESENTATIVE: Zelson, Steve T.; Agris, Cheryl H.

NUMBER OF CLAIMS: 4

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 27 Drawing Figure(s); 27 Drawing Page(s)

LINE COUNT: 810

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated arabinofuranosidase from **Bacillus**  
stearothermophilus NRRL B-18659, **Bacillus** stearothermophilus  
NRRL B-18660 and **Bacillus** stearothermophilus NRRL B-18661 is  
disclosed. The arabinofuranosidase has a maximum activity at about pH  
6.0 and at about 65.degree. C., maintains at least about 50% of its  
maximum activity at 70.degree. C. and pH 7.0 after 80 minutes, and has  
an isoelectric point of about 4.4. The arabinofuranosidase can be used in  
a method of hydrolyzing xylan present in wood pulp at temperatures of at  
least about 60.degree. C. and a pH of at least about 7.0. The  
arabinofuranosidase is used along with at least two xylanases and a  
xylosidase isolated from the above **Bacillus** stearothermophilus  
strains.

=> d hit 1

L4 ANSWER 1 OF 7 USPATFULL

TI Thermostable arabino furanoside produced by **Bacillus**  
stearothermophilus NRRL B-18659, **Bacillus** stearothermophilus  
NRRL B-18660 and **Bacillus** stearothermophilus NRRL B-18661

AB An isolated arabinofuranosidase from **Bacillus**

stearothermophilus NRRL B-18659, **Bacillus stearothermophilus** NRRL B-18660 and **Bacillus stearothermophilus** NRRL B-18661 disclosed. The arabinofuranosidase has a maximum activity at about pH 6.0 and at about 65.degree. C., maintains at least about 50% of its maximum activity at 70.degree. C. and pH 7.0 after 80 minutes, and has an isoelectric point of about 4.4. The arabinofuranosidase can be used in a method of hydrolyzing xylan present in wood pulp at temperatures of at least about 60.degree. C. and a pH of at least about 7.0. The arabinofuranosidase is used along with at least two xylanases and a xylosidase isolated from the above **Bacillus stearothermophilus** strains.

SUMM Neutral xylanases from obligate **alkalophilic**, thermostable **Bacillus** spp. have been described. [Okazaki, W., T. Akiba, K. Horikoshi, and R. Akahoshi, *Appl. Microbiol. Biotechnol.* 19 (1984): 335-340.] **Bacillus** isolates W1, W2, W3, and W4 all grow between 40.degree.-50.degree. C. and at a pH above 9.0. The strains reportedly produced two types of neutral xylanases--enzyme I with a pH optimum of 6.0 and a temperature optimum of 65.degree. C., and enzyme II with a temperature optimum of 70.degree. C. and a pH optimum of 7.0.

SUMM A thermostable xylanase produced by a "Bacillus stearothermophilus-like" strain has been described. [Gruninger, H., and A. Fiechter, *Enzyme Micro. Technol.* 8 (1986): 309-314.] Strain 4125 reportedly produces a neutral xylanase with a pH optimum of 6.5-7.5 (but only 65% activity at pH 9.5), a temperature optimum of 75.degree. C., and a half-life of 15 hours at 75.degree. C. No description of activity past pH 9.5 was reported in this reference. Strain 4125 has not been identified by any known culture collections as a **B. stearothermophilus** isolate, and no taxonomic data was given. The strain is not available from any collection or from the authors.

SUMM Kang, et al. described another xylanase from an **alkalophilic**, thermophilic **Bacillus** sp. [Kang, I. S., N. K. Sung, H. K. Chun, T. Akiba, and K. Horikoshi, *Korean J. Appl. Microbiol. Bioeng.* 14 (1986): 447-453.] The enzyme from this **Bacillus** strain, K-17, was also reportedly shown to have two components. Xylanase I from K-17 has optimal activity between pH 7.0-8.0 and 65.degree. C. It has no activity at pH 10.5. Xylanase II from K-17 is said to have 20% of its optimal activity at pH 10.5 and retains 70% activity after 1 hour at 65.degree. C., pH 6.5.

SUMM An extracellular xylosidase has been described for **Bacillus** strain K-17 described by Kang, et al. The xylosidase has an optimal activity at pH 7.0 and at 45.degree. C. The enzyme is not thermostable, being completely inactivated after 10 minutes at 60.degree. C.

SUMM Numerous microbial arabinofuranosidases from **Bacillus** spp. other than **B. stearothermophilus** have been studied and reported. [Karimi, S., and O. P. Ward. *Journal of Industrial Microbiology* 4 (1989): 173-180.] None of the non-thermophilic **Bacilli** described by Karimi and Ward produced high temperature active, thermostable arabinofuranosidases.

SUMM Isolate BPS-3, which has been identified by the Deutsche Sammlung Von Mikroorganismen (DSM) as **Bacillus stearothermophilus**, produces an extracellular xylanase composition when grown on xylan, hydrolyzed starch or a mixture of the two substrates. The enzyme composition consists of at least two endoxylanases, a beta-xylosidase, and an alpha-arabinofuranosidase.

SUMM Isolates BPS-3-H-17-4 and BPS-3-X2 are **asporogenous** mutants derived from BPS-3 after mutagenesis with ethylmethanesulfonate. They both produce the enzyme composition and are incapable of forming a terminal endospore.

SUMM This invention also discloses an arabinofuranosidase capable of hydrolyzing both 1,3 and 1,5 alpha-L-arabinofuranosyl linkages and capable of removing arabinose units from the nonreducing end of an arabinose chain. The arabinofuranosidase is also a novel enzyme. In

addition, the literature does not contain any reference for an arabinofuranosidase from a thermophilic **Bacillus**.

DETD Culture of Xyl 022. H-17-4, an **asporogenous** mutant of BPS-3, was grown in a batch fermentation at 55. degree. C. for 48 hours on a medium consisting of oat spelt xylan (5 g/l), beech xylan (5 g/l), 0.1% maltrin-100, and pH controlled to 6.5-7.5 by the addition of 2M sodium carbonate and 10% phosphoric acid.

CLM What is claimed is:

1. An isolated arabinofuranosidase having the following characteristics: (a) has a maximum activity at about pH 6.0; (b) has a maximum activity at about 65. degree. C.; (c) maintains at least about 50% of its maximum activity at about 70. degree. C. and pH 7 after 80 minutes; (e) has an isoelectric point of about 4.4; and (f) is obtainable from a strain of **Bacillus stearothermophilus** selected from the group consisting of **Bacillus stearothermophilus** NRRL B-18659, **Bacillus stearothermophilus** NRRL B-18660, and **Bacillus stearothermophilus** NRRL B-18661.

2. The isolated arabinofuranosidase of claim 1 in which said xylosidase is produced by **Bacillus stearothermophilus** NRRL B-18659.

3. The isolated arabinofuranosidase of claim 1 in which said xylosidase is produced by **Bacillus stearothermophilus** NRRL B-18660.

4. The isolated arabinofuranosidase of claim 1 in which said xylosidase is produced by **Bacillus stearothermophilus** NRRL B-18661.

=> d ibib ab2

'AB2' IS NOT A VALID FORMAT

In a multifile environment, a format can only be used if it is valid in at least one of the files. Refer to file specific help messages or the STNGUIDE file for information on formats available in individual files.

REENTER DISPLAY FORMAT FOR ALL FILES (FILEDEFAULT):end

=> d ibib ab 2

L4 ANSWER 2 OF 7 USPATFULL

ACCESSION NUMBER: 96:11072 USPATFULL

TITLE: Thermostable xylosidase produced by **Bacillus stearothermophilus** NRRL B-18659, **Bacillus stearothermophilus** NRRL B-18660 and **Bacillus stearothermophilus** NRRL B-18661

INVENTOR(S): Zamost, Bruce L., Danbury, CT, United States

PATENT ASSIGNEE(S): Elm, Dana D., Waterbury, CT, United States  
Novo Nordisk A/S, Bagsvaerd, Denmark (non-U.S. corporation)

NUMBER DATE

-----

PATENT INFORMATION: US 5489526 19960206

APPLICATION INFO.: US 1995-418331 19950406 (8)

RELATED APPLN. INFO.: Division of Ser. No. US 1993-87476, filed on 2 Jul 1993, now abandoned which is a continuation of Ser. No. US 1992-961044, filed on 14 Oct 1992, now abandoned which is a continuation of Ser. No. US 1990-535099, filed on 8 Jun 1990, now abandoned

DOCUMENT TYPE: Utility

PRIMARY EXAMINER: Naff, David M.

ASSISTANT EXAMINER: Meller, Mike

LEGAL REPRESENTATIVE: Zelson, Steve T.; Agris, Cheryl H.

NUMBER OF CLAIMS: 4

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 27 Drawing Figure(s); 27 Drawing Page(s)

LINE COUNT: 809

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB An isolated xylosidase from **Bacillus stearothermophilus** NRRL B-18659, **Bacillus stearothermophilus** NRRL B-18660 and **Bacillus stearothermophilus** NRRL B-18661 is disclosed. The xylosidase has a maximum activity at about pH 6.0 and at about 75.degree. C., maintains at least about 60% of its maximum activity at about 65.degree. C. and pH 7 after 4 hours, is resistant to end-product inhibition maintaining over 75% of maximum activity in the presence of 1 molar xylose and has an isoelectric point of about 5.0. The xylosidase can be used in a method of hydrolyzing xylan present in wood pulp at temperatures of at least about 60.degree. C. and a pH of at least about 7.0. The xylosidase is used along with at least two xylanases and an arabinofuranosidase isolated from the above **Bacillus stearothermophilus** strains.

=> d ibib ab 3

L4 ANSWER 3 OF 7 EUROPATFULL COPYRIGHT 2000 WILA

GRANTED PATENT - ERTEILTES PATENT - BREVET DELIVRE

ACCESSION NUMBER: 414297 EUROPATFULL EW 199642 FS PS

TITLE: Efficient production of mutant proteases.

Ergiebige Herstellung von Protease-Mutanten.

Production effective de proteases mutantes.

INVENTOR(S): Van der laan, Johannes Cornelis, J. Jongkindstraat 81/1, NL-1062 CP Amsterdam, NL;

Van Eekelen, Christiaan Albertus Gerardus, Bachplaats 14, NL-2661 HD Bergschenhoek, NL

PATENT ASSIGNEE(S): GIST-BROCADES N.V., Wateringseweg 1 P.O. Box 1, NL-2600 MA Delft, NL

PATENT ASSIGNEE NO: 200381

AGENT: Visser-Luirink, Gesina, Dr. et al, c/o GIST-BROCADES N.V., Patents and Trademarks Dept., Wateringseweg 1, P.O. Box 1, 2600 MA Delft, NL

AGENT NUMBER: 69841

OTHER SOURCE: EPB1996066 EP 0414297 B1 961016

SOURCE: Wila-EPS-1996-H42-T1

DOCUMENT TYPE: Patent

LANGUAGE: Anmeldung in Englisch; Veroeffentlichung in Englisch

DESIGNATED STATES: R AT; R BE; R CH; R DE; R DK; R ES; R FR; R GB; R GR; R IT; R LI; R LU; R NL; R SE

PATENT INFO. PUB. TYPE: EPB1 EUROPÄISCHE PATENTSCHRIFT

PATENT INFORMATION:

PATENT NO	KIND DATE
-----------	-----------

EP 414297	B1 19961016
-----------	-------------

	19910227
--	----------

'OFFENLEGUNGS' DATE:

APPLICATION INFO.: EP 1990-202109 19900802

PRIORITY APPLN. INFO.: EP 1989-202117 19890811

REFERENCE PAT. INFO.: EP 130756 A EP 283075 A

EP 284126 A EP 328229 A

WO 86-01825 A

REF. NON-PATENT-LIT.: COMUN. JORN. COM. ESP. DETERG., vol. 19, 1988, pages 257-266; J.H. VAN EE et al.: "Protein-engineering of the high alkaline detergent protease Maxacal"

=> d ibib ab 4

L4 ANSWER 4 OF 7 USPATFULL

ACCESSION NUMBER: 95:60106 USPATFULL

TITLE: Detergent composition containing alkaline pullylanase enzyme

INVENTOR(S):

Sone, Taeko, Utsunomiya, Japan  
Tosaka, Masaki, Utsunomiya, Japan  
Saeki, Katsuhisa, Kawachi, Japan  
Ara, Katsutoshi, Utsunomiya, Japan  
Deguchi, Katsuhiko, Utsunomiya, Japan  
Igarashi, Kazuaki, Ichikaimachi, Japan  
Kao Corporation, Tokyo, Japan (non-U.S. corporation)

PATENT ASSIGNEE(S):

	NUMBER	DATE
PATENT INFORMATION:	US 5429766	19950704
APPLICATION INFO.:	US 1993-139148	19931021 (8)
DISCLAIMER DATE:	20090915	
RELATED APPLN. INFO.:	Division of Ser. No. US 1992-960262, filed on 13 Oct 1992 which is a continuation of Ser. No. US 1991-681007, filed on 5 Apr 1991, now abandoned	

PRIORITY INFORMATION:

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1990-91179	19900405
	JP 1990-91563	19900406

DOCUMENT TYPE:

Utility

PRIMARY EXAMINER:

Maple, John S.

ASSISTANT EXAMINER:

Fries, Kery

LEGAL REPRESENTATIVE:

Oblon, Spivak, McClelland, Maier & Neustadt

NUMBER OF CLAIMS:

4

EXEMPLARY CLAIM:

1

NUMBER OF DRAWINGS:

17 Drawing Figure(s); 9 Drawing Page(s)

LINE COUNT:

1394

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel detergent composition containing an alkaline pullulanase is disclosed. The alkaline pullulanase has its optimum pH in an alkaline range and not deactivated by surfactants. Further it has strong resistance to almost all detergent components such as chelating agents, protease, etc. The the detergent composition of this invention has excellent detergency especially against starch soils.

=> d ibib ab 4

L4 ANSWER 4 OF 7 USPATFULL

ACCESSION NUMBER: 95:60106 USPATFULL

TITLE: Detergent composition containing alkaline pullylanase enzyme

INVENTOR(S):

Sone, Taeko, Utsunomiya, Japan  
Tosaka, Masaki, Utsunomiya, Japan  
Saeki, Katsuhisa, Kawachi, Japan  
Ara, Katsutoshi, Utsunomiya, Japan  
Deguchi, Katsuhiko, Utsunomiya, Japan  
Igarashi, Kazuaki, Ichikaimachi, Japan

PATENT ASSIGNEE(S):

Kao Corporation, Tokyo, Japan (non-U.S. corporation)

PATENT INFORMATION:

	NUMBER	DATE
PATENT INFORMATION:	US 5429766	19950704
APPLICATION INFO.:	US 1993-139148	19931021 (8)

DISCLAIMER DATE:

20090915

RELATED APPLN. INFO.:

Division of Ser. No. US 1992-960262, filed on 13 Oct 1992 which is a continuation of Ser. No. US 1991-681007, filed on 5 Apr 1991, now abandoned

PRIORITY INFORMATION:

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1990-91179	19900405
	JP 1990-91563	19900406

DOCUMENT TYPE:

Utility

PRIMARY EXAMINER:

Maple, John S.

ASSISTANT EXAMINER:

Fries, Kery

LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt

NUMBER OF CLAIMS: 4

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 17 Drawing Figure(s); 9 Drawing Page(s)

LINE COUNT: 1394

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A novel detergent composition containing an alkaline pullulanase is disclosed. The alkaline pullulanase has its optimum pH in an alkaline range and not deactivated by surfactants. Further it has strong resistance to almost all detergent components such as chelating agents, protease, etc. The the detergent composition of this invention has excellent detergency especially against starch soils.

=> d ibib ab 5

L4 ANSWER 5 OF 7 EUROPATFULL COPYRIGHT 2000 WILA

PATENT APPLICATION - PATENTANMELDUNG - DEMANDE DE BREVET

ACCESSION NUMBER: 634490 EUROPATFULL EW 199503 FS OS STA B

TITLE: Xylanase derived from a **bacillus** species, expression vectors for such xylanase and other proteins, host organisms therefor and use thereof.

Xylanase von einer **Bacillus** Spezies, Expressionsvektoren fuer diese Xylanase und andere Proteine, Wirtsorganismus dafuer und Verwendungen davon. Xylanase derivee d'une espece de **bacillus**, vecteurs d'expression pour cette xylanase et d'autres proteines, organismes hotes et leur usage.

INVENTOR(S): De Buyl, Eric, Vieux Chemin 5, B-1630 Linkebeek, BE; Lahaya, Andree, avenue des Pagodes 304, B-1020 Bruxelles, BE;

Ledoux, Pierre, avenue des Dix Arpents 100, B-1200 Bruxelles, BE;

Amory, Antoine, avenue Bal Air 44, B-1330 Rixensart, BE; Detroz, Rene, chaussee de Louvain 534, B-1390 Ohain, BE; Andre, Christophe, ruelle des Croix 39, B-1390 Grez-Doiceau, BE;

PATENT ASSIGNEE(S): Vetter, Roman, Warneckeweg 1, D-31303 Burgdorf, DE SOLVAY (Societe Anonyme), Rue du Prince Albert, 33, B-1050 Bruxelles, BE

PATENT ASSIGNEE NO: 200423

AGENT: Meyers, Liliane et al, Solvay & Cie S.A. Departement de la propriete industrielle 310, rue de Ransbeek, B-1120 Bruxelles, BE

AGENT NUMBER: 721

OTHER SOURCE: ESP1995004 EP 0634490 A1 950118

SOURCE: Wila-EPZ-1995-H03-T1a

DOCUMENT TYPE: Patent

LANGUAGE: Anmeldung in Englisch; Veroeffentlichung in Englisch

DESIGNATED STATES: R AT; R BE; R CH; R DE; R DK; R ES; R FR; R GB; R IT; R LI; R NL; R PT; R SE

PATENT INFO. PUB. TYPE: EPA1 EUROPÄISCHE PATENTANMELDUNG

PATENT INFORMATION:

PATENT NO	KIND DATE
-----------	-----------

EP 634490	A1 19950118
-----------	-------------

'OFFENLEGUNGS' DATE: 19950118

APPLICATION INFO.: EP 1994-202002 19940711

PRIORITY APPLN. INFO.: GB 1993-14780 19930715

ABEN A purified xylanase derived from B. Pumilus PRL B12 is disclosed. This xylanase is efficient for use in the biobleaching of wood pulp, permitting a strong reduction in the quantity of chlorine used and AOX compounds produced in classical and ECF wood pulp bleaching sequences as well as the quantity of ozone used in TCF sequences. The gene coding for the xylanase was isolated and purified and used to construct an expression vector therefor. A recombinant host strain of B.

licheniformis is also disclosed which is efficient for expressing heterologous enzymes, including the xylanase when transferred by the expression vector.

=> d ibib ab 6

L4 ANSWER 6 OF 7 USPATFULL

ACCESSION NUMBER: 94:46648 USPATFULL

TITLE: Detergent composition containing an alkaline pullulanase from **bacillus** ferm BP-3048

INVENTOR(S): Sone, Taeko, Tochigi, Japan

Tosaka, Masaki, Tochigi, Japan

Saeki, Katsuhisa, Tochigi, Japan

Ara, Katsutoshi, Tochigi, Japan

Deguchi, Katsuhiko, Tochigi, Japan

Igarashi, Kazuaki, Tochigi, Japan

PATENT ASSIGNEE(S): Kao Corporation, Tokyo, Japan (non-U.S. corporation)

NUMBER DATE

PATENT INFORMATION: US 5316691 19940531

APPLICATION INFO.: US 1992-960262 19921013 (7)

DISCLAIMER DATE: 20090915

RELATED APPLN. INFO.: Continuation of Ser. No. US 1991-681007, filed on 5 Apr 1991, now abandoned

NUMBER DATE

PRIORITY INFORMATION: JP 1990-91179 19900405

JP 1990-91563 19900406

DOCUMENT TYPE: Utility

PRIMARY EXAMINER: Naff, David M.

ASSISTANT EXAMINER: Meller, Michael V.

LEGAL REPRESENTATIVE: Oblon, Spivak, McClelland, Maier & Neustadt

NUMBER OF CLAIMS: 2

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 17 Drawing Figure(s); 9 Drawing Page(s)

LINE COUNT: 1356

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A detergent composition containing an alkaline pullulanase, a surfactant, alkaline agents and/or inorganic electrolytes, divalent metal ion scavengers and bleaching agents is disclosed. The alkaline pullulanase has an optimum pH range of 8.5-10.0 on pullulan, an optimum temperature of about 50.degree. C. and is not deactivated by surfactants. Further, the pullulanase has a strong resistance to almost all detergent components such as chelating agents, proteases, etc. The pullulanase is isolated from **Bacillus** sp. KSM-AP 1378 deposited as FERM BP-3048. The composition specifically contains 0.1-10 wt. % alkaline pullulanase B, 0.5-60 wt. % surfactant, 0-90 wt. % alkaline agents and/or inorganic electrolytes, 0-50 wt. % divalent metal ion scavengers, and 0-85 wt. % bleaching agents.

=> d ibib ab 7

L4 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2000 ACS

DUPLICATE 1

ACCESSION NUMBER: 1991:201180 CAPLUS

DOCUMENT NUMBER: 114:201180

TITLE: A protease-negative **Bacillus** mutant for efficient production of protease analogs

INVENTOR(S): Van der Laan, Johannes Cornelis; Van Eekelen, Christiaan Albertus

PATENT ASSIGNEE(S): Gist-Brocades N. V., Neth.

SOURCE: Eur. Pat. Appl., 36 pp.

CODEN: EPXXDW

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 414297	A1	19910227	EP 1990-202109	19900802
EP 414297	B1	19961016		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
AT 144283	E	19961115	AT 1990-202109	19900802
ES 2095233	T3	19970216	ES 1990-202109	19900802
DD 297187	A5	19920102	DD 1990-343328	19900808
CA 2023094	AA	19910212	CA 1990-2023094	19900810
AU 9060961	A1	19910214	AU 1990-60961	19900810
AU 629970	B2	19921015		
BR 9003956	A	19910903	BR 1990-3956	19900810
JP 03210177	A2	19910913	JP 1990-213562	19900810
RU 2060276	C1	19960520	RU 1990-4830790	19900810
CN 1049866	A	19910313	CN 1990-107928	19900811
			EP 1989-202117	19890811

## PRIORITY APPLN. INFO.:

AB A protease-neg. **alkalophilic Bacillus** mutant is prep'd. by deleting the protease-coding gene via homologous or illegitimate recombination. Transformation of this mutant with an integrating plasmid encoding a protease analog (e.g. with a single base change) results high yield of the protease for use in laundry detergents. Plasmid pM58.DELTA. carrying 5'- and 3'-ends of the protease gene was prep'd. and integrated into the chromosomal protease gene locus of **Bacillus** PBT110, an **asporogenous** mutant of **Bacillus** PB92, to obtain protease-neg. **Bacillus** mutants PBT125 and PBT126. Plasmid pBHB-MXL M216Q carrying the gene for the M126Q analog of the PB92 protease was prep'd. and used for transformation of mutant PBT125. The yield of the M216Q protease from this host was comparable to that from the parental strain PBT110.